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SR

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/194,112 11/23/98 ONUKI

M 229-532PCT

002292 QM32/0906
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EXAMINER

BLAU, S

ART UNIT

PAPER NUMBER

3711

DATE MAILED:

16
09/06/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/194,112

Applicant(s)

ONUKI ET AL.

Examiner

Stephen L. Blau

Art Unit

3711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 7/3/9
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☐ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 15.

- 18) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: _____.

Art Unit:

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. With respect to claims 9-12, the changes to the claims are agreed with and the rejections under 35 U.S.C. 112, second paragraph, are removed.

3. Claim 26 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 26 is indefinite in that the variable y is not defined.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit:

5. Claims 21, 23-25, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peker.

Peker discloses a golf club head having a hitting face formed of a metallic amorphous metal, an amorphous alloy of zirconium base, Ni, Al, Cu, Hf, tensile strength 1.9 GPa (194 kgf/mm²) (Col. 4 Lns. 12-43), a material meeting the formula $M(a)X(b)$ with $65 \leq a \leq 100$ and $0 \leq b \leq 35$ in the form of $M(\text{Zr/Ti/Be/Cu/Ni})$ of 100 (Col. 4, Lns. 13-16), a material meeting the formula $\text{Zr}(c)\text{M}(d)\text{X}(e)$ with $20 \leq c \leq 80$, $20 \leq d \leq 80$, and $0 \leq e \leq 35$ in the form of Zr of 41.2, $M(\text{Ti/Be/Cu/Ni.})$ of 58.8, and $X(\text{Hf})$ of 0 (Col. 4, Lns. 23-27), and material meeting the formula $\text{Zr}(c)\text{M}(d)\text{X}(e)$ with $50 \leq c \leq 75$, $25 \leq d \leq 50$, and $0 \leq e \leq 1$ in the form Zr of 60, $M(\text{Al/Ni})$ of 40 and $X(\text{Hf})$ of 0 (Col. 4, Lns. 39-43). Clearly the hitting face material has a Young's modulus and a hardness and one skilled in the art in manufacturing a hard face with mixtures of elements of Zr/Ti/Be/Cu/Ni/Hf would have selected a composition having a suitable Young's modulus and tensile strength in which Young's modulus and tensile strength meets the relationships in claim 30, a Young's modulus of 5,000 to 10,000 kgf/mm², and a tensile strength of 105 to 175 kgf/mm² are included.

The difference between the claims and Peker is that Peker does not disclose a Young's modulus of 5,000 to 10,000 kgf/mm², a tensile strength of 105 to 175 kgf/mm², a relationship between Young's modulus and tensile strength as defined by claim 30.

Art Unit:

It would have been obvious to modify the face of Peker to have a Young's modulus and tensile strength as defined by the claims in order to have face which has a sufficient flex for a specific golfer.

6. Claims 1-20, 22, 26-29 and 31-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peker as applied to claims 21, 23-25, and 30 above, and further in view of Aizawa.

Clearly the hitting face material of Peker has a Young's modulus and a hardness and one skilled in the art in manufacturing a hard face with mixtures of elements of Zr/Ti/Be/Cu/Ni/Hf would have selected a composition having a suitable hardness and Young's modulus in which a hardness and Young's modulus which meets the relationship in claim 5 and a Vickers hardness of 400 to 1,000 HV are included.

Peker lacks a hitting face having at least partially a hitting portion which consists of a metallic material with a thickness of 1 to 3 mm, a back of a hitting portion being not supported by a support member, a Vickers hardness of 400 to 1,000 HV, and a relationship of Young' modulus and hardness as defined by claim 5.

Aizawa discloses a head having a face insert with a thickness being 2-3 mm (Claims 7-8) and a conventional golf club head wherein a back of a hitting portion is not supported by a support member (Fig. 5, Col. 1, Lns. 15-18). In view of the patent of Aizawa it would have been obvious to modify the head of Peker to have a hitting face having at least partially a hitting

Art Unit:

portion which consists of a metallic material with a thickness of 2 to 3 mm in order to ensure there is enough material of the face to have the desired flexibility and hardness to impact a ball. In addition, in view of the invention of Aizawa and the conventional golf club head disclosed in Aizawa it would have been obvious to modify the head of Peker to have a back of a hitting portion being not supported by a support member in order to have a more flexible face when impacting a ball to maximize the velocity of a ball at impact for a golfer with a specific strength.

In addition, it would have been obvious to have a Vickers hardness of 400 to 1,000 HV, and a relationship of Young' modulus and hardness as defined by claim 5 in order to have a face which maximizes the transfer of energy to a ball at impact.

Response to Arguments

7. The argument that it is improper to use the patent of Peker since the prior art reference did not teach or suggest all the claim limitations is disagreed with. Obviousness can be established to modify the teaching of prior art to produce the claimed invention by motivation in the knowledge generally available to one of ordinary skill in the art (In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)). In addition, inherent teaching of a prior art reference may be relied upon in a rejection (In re Napier, 55 F.3d 610, 613, 34 USPQ2d 1782, 1784 (Fed. Cir. 1995)). Peker discloses the alloys which meet the percentages as defined in the claims (Claims 14-19). Clearly the face of Peker will have a inherent properties as Young's modulus, tensile strength and

Art Unit:

hardness. Since the material of Peker is substantially the same as the material claimed by the applicant in composition, it would be obvious to have the face of Peker having substantially the same properties as claimed. In addition, these properties would be suitable selections for one skilled in the art to meet the needs of a specific golfer out of the numerous different types of golfers with different needs. The argument that it is improper to use the reference of Aizawa since Aizawa discloses a pure beryllium insert is disagreed with. Aizawa was not used to show the type of face inserts but that it is known to have a face material with a thickness as claimed. Face inserts are old in the art and since there are a variety of different golfers with different strengths and swing speeds and a face having the thickness as claimed and a material as disclosed by Peker would be an obvious combination. Clearly the head of Peker itself will have a face insert thickness (Fig. 5A). 2-3 mm is a suitable selection.

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

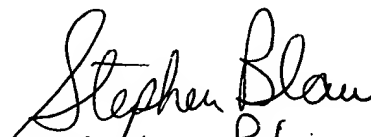
Art Unit:

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Japan patents disclosed on PTO- 1449 (Paper No. 15) disclose hardnesses, tensile strengths, and a Young's Modulus as defined by the claims for a face or head of a golf club.
10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steve Blau whose telephone number is (703) 308-2712. The examiner is available Monday through Friday from 8 a.m. to 4:30 p.m.. If the examiner is unavailable you can contact his supervisor Jeanette Chapman whose telephone number is (703) 308-1310. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0858.

slb/ 5 September 2001


Stephen Blau
examiner
Art Unit 3711

Attachment for PTO-948 (Rev. 03/01, or earlier)
6/18/01

The below text replaces the pre-printed text under the heading, "Information on How to Effect Drawing Changes," on the back of the PTO-948 (Rev. 03/01, or earlier) form.

INFORMATION ON HOW TO EFFECT DRAWING CHANGES

1. Correction of Informalities -- 37 CFR 1.85

New corrected drawings must be filed with the changes incorporated therein. Identifying indicia, if provided, should include the title of the invention, inventor's name, and application number, or docket number (if any) if an application number has not been assigned to the application. If this information is provided, it must be placed on the front of each sheet and centered within the top margin. If corrected drawings are required in a Notice of Allowability (PTOL-37), the new drawings **MUST** be filed within the **THREE MONTH** shortened statutory period set for reply in the Notice of Allowability. Extensions of time may **NOT** be obtained under the provisions of 37 CFR 1.136(a) or (b) for filing the corrected drawings after the mailing of a Notice of Allowability. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftsperson.

2. Corrections other than Informalities Noted by Draftsperson on form PTO-948.

All changes to the drawings, other than informalities noted by the Draftsperson, **MUST** be made in the same manner as above except that, normally, a highlighted (preferably red ink) sketch of the changes to be incorporated into the new drawings **MUST** be approved by the examiner before the application will be allowed. No changes will be permitted to be made, other than correction of informalities, unless the examiner has approved the proposed changes.

Timing of Corrections

Applicant is required to submit the drawing corrections within the time period set in the attached Office communication. See 37 CFR 1.85(a).

Failure to take corrective action within the set period will result in **ABANDONMENT** of the application.